

Kentucky
Agricultural Experiment Station

University of Kentucky

Some Factors Affecting the Price of White Burley
Tobacco

BULLETIN NO. 323



Lexington, Ky.
October, 1931

EXPERIMENT STATION STAFF

BOARD OF CONTROL

Richard C. Stoll, Chairman, Lexington, Ky.
R. G. Gordon, Louisville, Ky.
James Park, Lexington, Ky.
James W. Turner, Paintsville, Ky.
E. B. Webb, Lexington, Ky.

Frank L. McVey, President

Thomas P. Cooper, Dean and Director

ADMINISTRATION

T. P. Cooper, Director
D. H. Peak, Business Agent
O. L. Ginocchio, Secretary

AGRONOMY

George Roberts, Head
E. J. Kinney, Assoc. Agronomist
P. E. Karraker, Asst. Agronomist
J. F. Freeman, Asst. Agronomist
W. D. Valleau, Plant Pathologist
E. N. Fergus, Asst. Agronomist
J. B. Kelley, Agricultural Engineer
E. M. Johnson, Asst. Plant Pathologist
R. L. Calfee, Asst. in Agronomy
C. E. Bortner, Asst. in Agronomy

ANIMAL HUSBANDRY GROUP

E. S. Good, Chairman
W. S. Anderson, Horses
E. J. Wilford, Swine, Meats
W. J. Harris, Beef Cattle
J. Holmes Martin, Poultry
Fordyce Ely, Dairy Husbandry
W. C. Eskew, Cream Grading
Wesley Brooks, Cream Grading
J. W. Nutter, Dairyman
Amanda Harms, Asst. Path. Bact.
G. D. Buckner, Animal Nutrition
W. M. Insko, Jr., Animal Nutrition
Harold Barber, Head Herdsman

ANIMAL PATHOLOGY

W. W. Dimock, Head
Philip R. Edwards, Bacteriologist
F. E. Hull, Asst. Veterinarian
D. J. Healy, Bacteriologist
Genevieve Farwell, Technician

CHEMISTRY

J. S. McHargue, Acting Head
S. D. Averitt, Chemist
O. M. Shedd, Chemist
W. R. Roy, Asst. Chemist
Robert Calfee, Asst. Chemist

CREAMERY LICENSE SECTION

J. D. Foster, Inspector, in Charge
N. J. Howard, Inspector

ENTOMOLOGY AND BOTANY

W. A. Price, Head
Mary L. Didlake, Asst. Entomologist
H. H. Jewett, Research Asst. Entomologist
C. O. Eddy, Assoc. Entomologist
Jessie Taylor, Seed Analyst

FARM ECONOMICS

W. D. Nicholls, Head
W. L. Rouse, Farm Management
Merton Oyler, Rural Life Studies
George B. Byers, Farm Organization
Bruce Poundstone, Farm Management
Fred Boyd, Rural Life Studies

FEED CONTROL

J. D. Turner, Head
H. D. Spears, Chemist
W. G. Terrell, Inspector
Fred Fitschen, Inspector
Encil Deen, Inspector
L. V. Amburgey, Microscopist

FERTILIZER CONTROL

H. E. Curtis, Head
Harry Allen, Chemist
Lelah Gault, Asst. Chemist
Robert Mathews, Inspector

HOME ECONOMICS

Statie Erikson, Head
Ruth Boyden, Assistant

HORTICULTURE

A. J. Olney, Head
C. S. Waltman, Assistant
E. M. Emmert, Assistant
W. D. Armstrong, Assistant

MARKETS AND RURAL FINANCE

H. B. Price, Head
Dana G. Card, Prices
C. D. Phillips, Markets
Clifton J. Bradley, Rural Finance
Olin M. Farrington, Markets

PUBLIC SERVICE LABORATORY

L. A. Brown, Head
A. L. Meader, Asst. Chemist
James H. Martin, Asst. Chemist
E. K. Borman, Bacteriologist
Harvey Cunov, Asst. Bacteriologist
Todd Green, Asst. Bacteriologist

ROBINSON SUBSTATION

(Quicksand, Ky.)

R. W. Jones, Superintendent
G. H. Wiggin, Forester
James S. Kring, Forest Ranger

WESTERN KY. SUBSTATION

(Princeton, Ky.)

S. J. Lowry, Superintendent
L. M. Caldwell, Assistant

CONTENTS

	Page
Introduction	423
Changes in production, acreage and yield per acre....	424
Changes in consumption	426
Yearly fluctuations in production	428
Trends in burley tobacco prices.....	429
Growers' response to price.....	430
The relation of size of crop to total value.....	433
Conclusions	436

ACREAGE, PRODUCTION, YIELD, STOCKS, DISAPPEARANCE AND FARM PRICE OF BURLEY TOBACCO
(U. S. Type 31.)

Crop Year	Acreage (Acres)	Yield Per Acre (Pounds)	Production (1000 Lbs.)	Stocks October 1 (1000 Lbs.)	Total Supplies October 1 (1000 Lbs.)	Disappearance Year Ending October 1 (1000 Lbs.)	Average Farm Price (Cents)
1909	267,300	956	255,439				13.4
1910	330,000	830	273,900				9.6
1911	190,000	920	174,800				7.5
1912	228,060	860	196,080	215,307	411,387		11.0
1913	232,600	760	176,776	225,199	401,975	186,188	12.3
1914	244,200	920	224,664	203,672	428,336	198,303	8.1
1915	244,200	890	217,338	249,804	467,142	178,532	9.5
7-yr. Ave.	248,043	877	216,714	223,496	427,210	187,674	10.2
1916	265,000	970	257,050	199,321	456,371	267,820	15.5
1917	263,000	960	251,520	207,551	459,114	248,777	26.3
1918	300,000	1,040	312,000	190,137	502,137	268,577	32.6
1919	338,000	821	277,650	229,890	507,541	242,246	33.2
1920	356,000	886	315,259	267,789	583,048	239,751	13.4
5-yr. Ave.	304,200	935	282,696	218,946	501,642	259,514	22.5
1921	259,000	854	220,849	324,351	545,200	258,697	22.4
1922	321,100	858	275,601	280,856	556,457	264,344	25.2
1923	372,735	882.5	329,504	342,885	672,389	213,573	21.4
1924	347,083	863.8	299,200	428,332	727,532	244,057	21.3
1925	345,700	785.9	275,146	459,087	734,233	268,445	19.0
5-yr. Ave.	329,124	850	280,060	367,102	647,162	249,823	22.6
1926	359,600	837	301,015	466,036	767,052	268,197	13.1
1927	245,100	732	180,197	451,251	631,448	315,800	26.0
1928	336,900	805	270,613	347,837	618,440	283,621	30.4
1929	429,400	779.1	334,566	332,332	666,948	286,058	21.8
1930	472,600	672.5	319,263	373,032	722,295	293,916	15.5
5-yr. Ave.	368,800	739	287,131	395,106	681,237	289,518	20.6

Production and price data from U. S. D. A. Crop Estimates.
Stocks data from U. S. Department of Commerce and U. S. Department of Agriculture.

BULLETIN NO. 323

Some Factors Affecting the Price of White Burley Tobacco

By Dana G. Card

Changes in the production, the consumption or the yield of burley* tobacco have economic significance to both growers and manufacturers. Expansion of the burley-producing area in recent years, accompanied by increases in acreage in the older producing regions, has created the impression of a marked expansion in production. The rapid increase in the use of cigarettes has been thought to offer a similar expansion in the market outlet for burley tobacco. As a matter of fact, however, burley production has expanded less rapidly than acreage, and the consumption of burley tobacco has increased much less rapidly than the manufacture and use of cigarettes. The presentation of certain facts which have had a bearing upon these changes and thru them have affected tobacco prices, may aid growers in making future production plans.

Frequently the production of burley tobacco has not been well adjusted to consumption requirements and it is probable that more accurate adjustments would have been of benefit to the industry. Changes in prices sometimes have been the cause and sometimes the result of these maladjustments. The purpose of this bulletin is to present information on some of the economic changes which have taken place since 1912 and to furnish facts which may aid in formulating future adjustment programs.

* The name of this kind of tobacco is white burley. The common form, burley, however, is used in this bulletin.

CHANGES IN PRODUCTION, ACREAGE AND YIELD PER ACRE

Burley tobacco production increased very rapidly from 1912 to 1918, as illustrated in Figure 1, but has shown little definite tendency either to increase or decrease since that time.

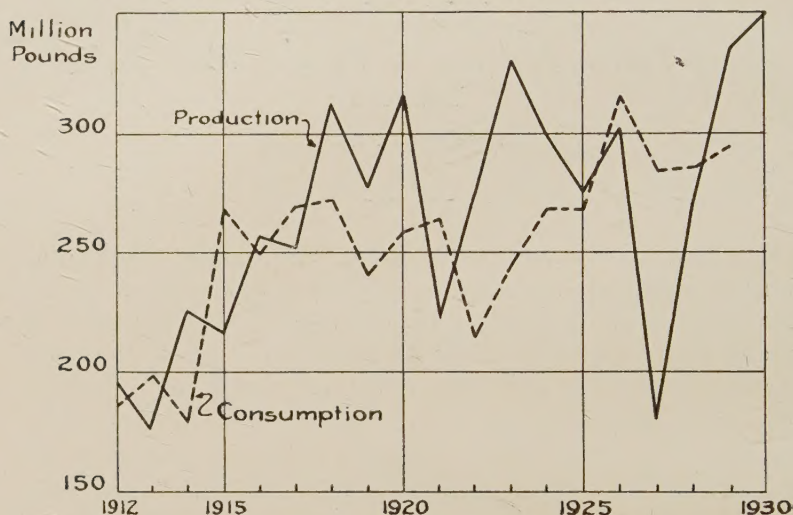


Figure 1. Production and consumption of burley tobacco, 1912 to 1929. Maladjustments between production and consumption have been frequent.

The acreage devoted to this crop also has increased (see Figure 2), but the period prior to 1919 shows the most rapid expansion. Since 1919 greater fluctuations in acreage have occurred than prior to that time probably because of violent fluctuations in tobacco prices.

On the other hand, yields per acre since 1918 have shown a decidedly opposite trend to that of acreage. Figure 2 illustrates the changes in both acreage and yield per acre from 1912 to 1929. The acreage of burley tobacco increased, on the average, about 7,800 acres per year but yields per acre decreased nearly $7\frac{1}{2}$ pounds per year during this period. The balancing effect upon production, of this decrease in yield accompanying the increase in acreage, is illustrated in Figure 1.

Doubtless the change to lower average yields in recent years is chiefly the result of three causes: First, a change in

the strain of tobacco grown, from that with a thick, heavy, red leaf to a type with a thin, light-weight, bright-colored leaf; Second, the extension of the producing territory to less productive soils; and Third, decreased fertility of some of the

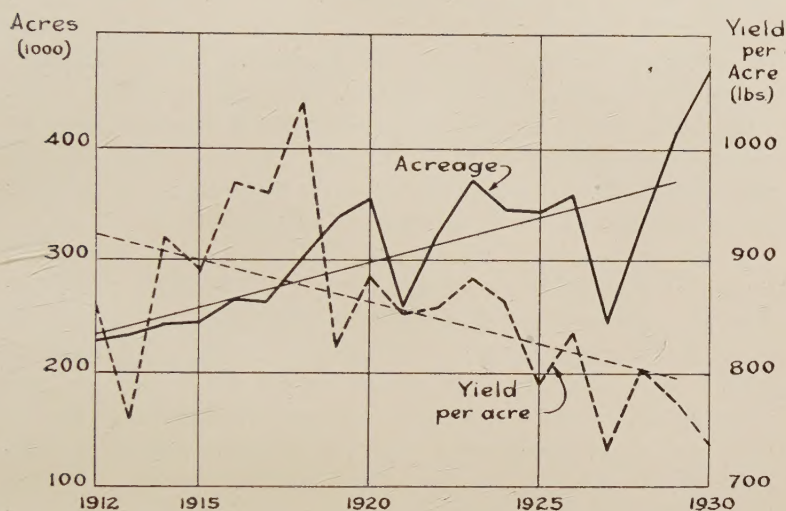


Figure 2. Total acreage and average yield per acre of burley tobacco. Yields per acre have declined rapidly since 1918 altho the total acreage has tended to increase thruout the period.

older producing areas. Whether or not average yields will continue to decline is problematical. Market demand, as reflected in prices, does not seem to require a still lighter type of burley, the production of which might necessitate the lowering of yields per acre. The producing area doubtless can be extended still further without the utilization of soil materially inferior to much of that now being used for tobacco which also suggests that further declines in yield may not be important. On the other hand, if the use of fertilizer becomes more general, yields may be expected to recover somewhat from their present low point. Plans for future changes in acreage, therefore, should be considered carefully in the light of production practices and tendencies in consumption.

CHANGES IN CONSUMPTION

The consumption of burley tobacco is much greater now than it was in 1912, when figures which permit the calculation of consumption, or disappearance, first were published. The change has not taken place gradually, however. Prior to 1916, the rate of increase was very rapid but the period from 1916 to 1923 was one of declining consumption. Since 1923, consumption has again been increasing. The rate of decline from 1916 to 1923, was about $4\frac{1}{3}$ million pounds per year and the average annual rate of increase since 1923 has been about 8 million pounds. These changes can be visualized in the lower curve of Figure 3, or from the table on page 422.

Burley tobacco is used in the manufacture of cigarettes, smoking tobacco and chewing tobacco but the relative importance of these uses is not readily ascertainable. The rapid increase in the manufacture of cigarettes in recent years has been looked upon as a rapidly expanding market outlet for this variety. The expansion in cigarette consumption, however, has not been accompanied by corresponding increases in the disappearance¹ of burley tobacco. The disappearance of flue-cured tobacco, on the other hand, has almost paralleled² the increase in cigarette manufacture, as shown in Figure 3, and appears to indicate that the growers of this type of tobacco have been the principal beneficiaries of the expanding domestic cigarette market.

The advantage of a growing cigarette industry to growers of burley tobacco is more evident, however, when exports of both burley and flue-cured tobacco are considered. Burley tobacco is used almost entirely in domestic markets, as exports generally make up less than 3 percent of annual disappearance. On the other hand, from 46 percent to 58 percent of the disappearance of flue-cured tobacco in recent years has been exported. Disappearance of flue-cured tobacco in domestic

¹ "Disappearance" is the difference between the total supply of leaf tobacco at the beginning of the year and the amount still in the hands of manufacturers at the end of the year. It includes tobacco exported, lost thru fire or other causes and the amount manufactured. In this bulletin, however, "disappearance" and "consumption" have been used interchangeably.

² Figure 3 has been drawn on semilogarithmic paper in order that parallel lines may indicate identical rates of increase.

trade has increased less rapidly than cigarette production in the United States and it has disappeared only slightly more rapidly than burley tobacco. The similarity between the disappearance of burley and the domestic disappearance of flue-

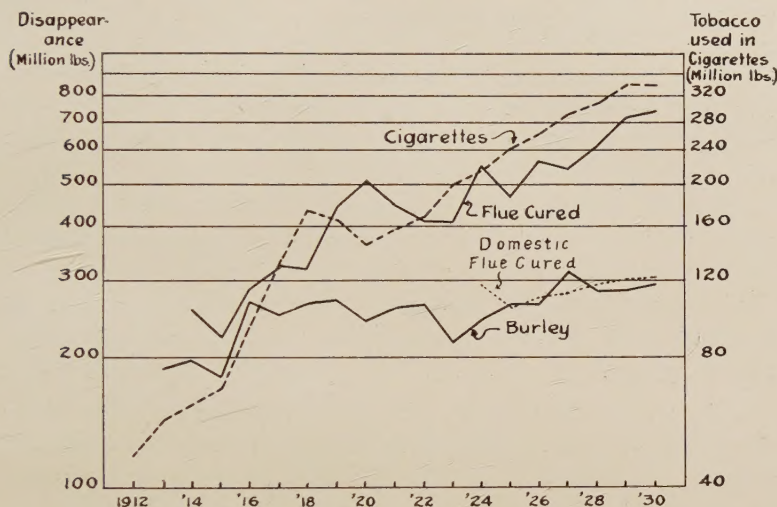


Figure 3. Tobacco used in the manufacture of cigarettes and the disappearance of flue-cured and burley tobacco. Cigarette production and the total disappearance of flue-cured tobacco have increased in similar proportions while the disappearance of burley and the domestic disappearance of flue-cured tobacco have increased much more slowly.

cured tobacco from 1924 to 1930, is indicated in Figure 3. It appears, therefore, that the use of burley tobacco in the manufacture of cigarettes must have increased substantially in recent years. This conclusion is supported further by the fact that the use of chewing and smoking tobacco, which has formed an important outlet for burley, has declined during a period of increasing burley consumption.

Whether or not the upward trend of burley tobacco consumption, which has existed since 1923, will continue, will depend upon the relative importance of future developments in the manufacture and use of cigarettes and chewing and smoking tobacco. Which of these factors will be the more important in the future is a matter of conjecture.

YEARLY FLUCTUATIONS IN PRODUCTION

Altho the production and consumption of burley tobacco have followed the same general tendencies since 1912, a comparison of annual production with annual consumption gives evidence of frequent maladjustments between them. (See Figure 1.) When production is greater than consumption, the excess tobacco must be stored until a time when production is less than consumption. The expense of storing tobacco and the risks of loss from fire, water and changing market conditions, all have a bearing upon the prices paid to farmers in years of excessively large crops. It appears, therefore, that a better adjustment between annual production and annual consumption would prove beneficial to all who are financially interested in the burley tobacco industry. Hence a knowledge of year to year fluctuations in production is pertinent to a discussion of burley tobacco prices.

As year-to-year changes in the production of tobacco are due to changes in acreage or to changes in yields per acre, or to both, it is of interest to know the relative importance of these two factors. An examination of yearly fluctuations which have occurred in burley tobacco production during the period, 1909 to 1929, indicates that changes in acreage have been about three times as important as changes in yields in bringing about yearly changes in total production. About 77 percent of the changes in production were due to variations in acreage and about 23 percent to variations in yield per acre.

Voluntary attempts to adjust production to market requirements are much more likely to succeed with a crop the production of which is mainly influenced by the acreage planted than with a crop the yields of which fluctuate widely.* Variations in yield are due largely to weather conditions and therefore are not so directly subject to control. The acreage planted, however, is quite largely determined by the voluntary efforts of growers. The acreage set to burley tobacco has a relatively

*G. P. Scoville, for example, found that 62 percent of the changes in cabbage production were due to changes in yield while only 37 percent were explained by changes in acreage. *Farm Economics*, Cornell University, March, 1927, p. 635.

large influence upon the total annual production, while changes in production which occur from fluctuations in yield alone, are relatively small. The acreage set is affected materially by the prices which growers receive.

TRENDS IN BURLEY TOBACCO PRICES

Like the other factors which have been discussed, prices have shown wide fluctuations and definite changes during the period under consideration. In the accompanying table, the actual farm prices of burley tobacco, as reported by the United States Department of Agriculture, are given for each year since 1912. Prices rose during the war years and reached a peak in 1919, during the post-war inflation. Since that time, with the exception of two low years, 1920 and 1926, and three high years,

Actual and Adjusted Farm Price of Burley Tobacco, 1912 to 1929.

Crop Year	Actual ¹ Farm Price (cents per lb.)	Index of General Price Level ²	Adjusted Farm Price ³ (cents per lb.)
1912	11.0	69.8	15.8
1913	12.3	69.0	17.8
1914	8.1	68.3	11.9
1915	9.5	74.2	12.8
1916	15.5	97.9	15.8
1917	26.5	124.3	21.3
1918	32.6	133.8	24.4
1919	33.2	150.4	22.1
1920	13.4	130.3	10.3
1921	22.4	93.4	24.0
1922	25.2	100.8	25.0
1923	21.4	98.6	21.7
1924	21.3	99.8	21.3
1925	19.0	102.7	18.5
1926	13.1	97.4	13.4
1927	26.0	96.3	27.0
1928	30.4	97.5	31.2
1929	21.8	94.2	23.1
1930	15.5	79.3	19.5

¹ As reported by the U. S. Department of Agriculture.

² June to May averages, beginning June, 1912, of monthly indexes for wholesale prices of all commodities (Bureau of Labor Statistics, 1926 base). This corresponds fairly closely to the period in which most of the income from each tobacco crop is spent.

³ Column 1 divided by Column 2 and multiplied by 100.

1922, 1927, and 1928, prices have remained fairly constant. Prices, however, are only relative. They represent the exchange relationship between goods and money. When the prices of goods in general are high, the price of any particular commodity tends to be high also. It seems reasonable to suppose, therefore, that the high tobacco prices of the war and post-war years may have been due, in part at least, to the high prices of other things at that time. In order to allow for this influence, an attempt has been made to adjust the tobacco prices in each year for the general level of prices at the time. In effect, this places them all on the same general level of prices of other things, expresses their relative "purchasing power", and makes them more directly comparable from year to year. The "adjusted" prices so computed are given in the last column of the table.

Both the actual and the adjusted prices are shown in Figure 4, which illustrates the effect of the adjusting process. When only the adjusted prices are considered a general upward tendency during the period is indicated. As these prices have been adjusted and are not actual, this tendency to rise does not necessarily mean that actual prices in cents per pound were rising. It may indicate either that the price of burley tobacco has been increasing more rapidly or that it has been falling less rapidly than the prices of commodities in general. As a matter of fact, however, there has been very little difference between the actual and the adjusted prices since 1920. Whatever may be the cause of this upward trend in tobacco prices, relative to other things, the fact that it has occurred, is a major consideration in determining what normally may be expected in the way of prices for burley tobacco. Whether or not these tendencies will prevail in the future is, again, a matter of conjecture.

GROWERS' RESPONSE TO PRICE

Burley tobacco growers respond quickly to prices received for their product by changing the acreage of tobacco grown. Acreage changes made in the earlier years and those made more

recently, however, can hardly be compared directly except in their relation to the usual acreage of the time. For this purpose it becomes convenient to determine a so-called "normal" acreage for each year as well as a "normal" price and yield.

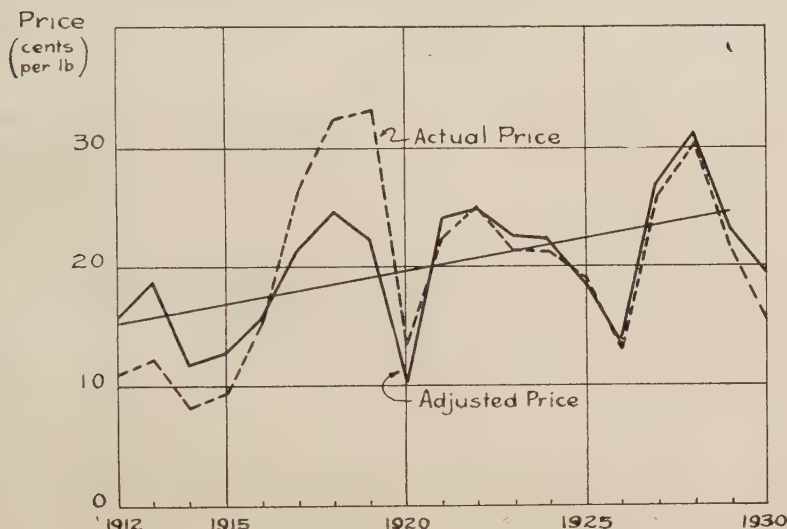


Figure 4. Actual and adjusted farm prices of burley tobacco. Adjustment for changes in the general price level reduces the fluctuations in tobacco prices prior to 1920.

The tendencies for acreage, production and prices to increase and for yields to decrease have been mentioned, thus far, without any particular reference as to how these tendencies were determined. It is possible, however, by mathematical computation, to arrive at a measure which represents the average change per year, either up or down, for the entire period under observation. This has been done for each of the factors mentioned above and is represented by the straight lines drawn thru the curves in Figures 2 and 4. Measures so computed frequently are spoken of as "straight line trends".

If the changes which took place in the acreage devoted to burley tobacco during the period, 1912 to 1929, had taken place gradually, year by year, the acreage then would be represented by the straight line drawn thru the acreage curve in Figure 2.

The values represented by this line, therefore, may be considered as "normal" and variations above and below this line, as variations above and below normal. The term "normal", is used in this sense thruout the remainder of this bulletin. A convenient way of expressing the relationship to normal is in terms of percentage, hence values above 100 percent of normal are larger than normal while those under 100 percent are below normal. This permits the direct comparison of small crops of early years with much larger ones later but which are equally small in relation to their normal.

If burley prices are above or below normal in any year, they usually are followed by an acreage which is likewise above or below normal the next year. This relationship has existed fifteen times in the last twenty-one years, while major changes in the opposite direction have occurred only three times. In other words, when prices are good, farmers usually plant a larger acreage the next year, and when prices are poor they usually reduce the acreage. Not all growers react in the same way but many of them change their acreages in the manner suggested.

The relationship which exists between prices one year and acreage the next, is shown in Figure 5. Adjusted prices have been used and are expressed in percent of their normal on the horizontal scale at the bottom of the figure. The acreage, one year later, also in percent of normal, is shown on the vertical scale at the left. Each dot represents a year and the straight line shows the average relationship between prices and acreage the following year. The numbers refer to the year in which the acreage was grown. If the acreage could be predicted with absolute accuracy from the price the preceding year, all the dots would fall directly on the line. The scatter about the line, therefore, indicates the lack of absolute relationship between prices one year and acreage the next.

When prices for two preceding years are considered, nearly three-fourths of the variations which have taken place in burley acreage during the last twenty years can be explained. Prices in the first preceding year, however, seem to be much more

important¹ in determining acreages than prices in earlier years. Doubtless the farther removed prices are from the time of planting the less influence they have upon growers' plans.

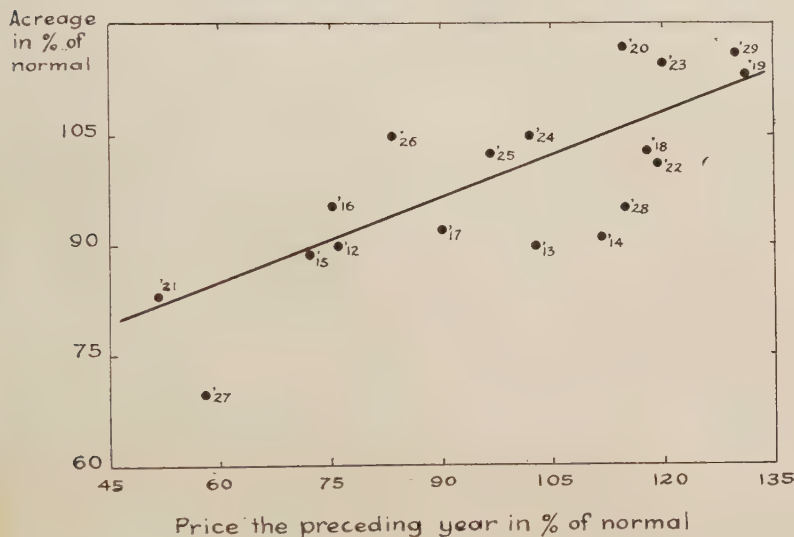


Figure 5. Acreage of burley tobacco in percent of normal and the adjusted farm price the preceding year in percent of normal. Prices received one year have a decided effect upon the acreage planted to burley tobacco the following year. (Coefficient of correlation, $r = +.76$.)

The responsiveness of growers to prices suggests the possibility of adjusting production to market requirements thru the medium of price influence. Large cooperative marketing organizations sometimes can exert considerable influence by such means. A question at once arises, however, as to what is the most profitable acreage to grow. This involves many complicated factors only one of which will be mentioned here.

THE RELATION OF SIZE OF CROP TO TOTAL VALUE

The effect which the size of a crop has upon its total value

¹Multiple correlation analysis gave $R_{1,23} = .86$ when $X_1 = \text{Acreage}$, $X_2 = \text{Adjusted prices one year earlier}$, and $X_3 = \text{Adjusted prices two years earlier}$, all expressed in percent of straight line trends. The coefficient of determination of $X_2 = +.58$ and of $X_3 = +.16$. Coefficients of partial correlation are $r_{12,3} = +.826$ and $r_{13,2} = +.592$. Inclusion of the third preceding year gave almost identical results.

merits careful consideration in production adjustment programs. For some commodities it has been shown conclusively that, within the usual limits of variation in production, the smaller the crop the greater the total value and vice versa. For burley

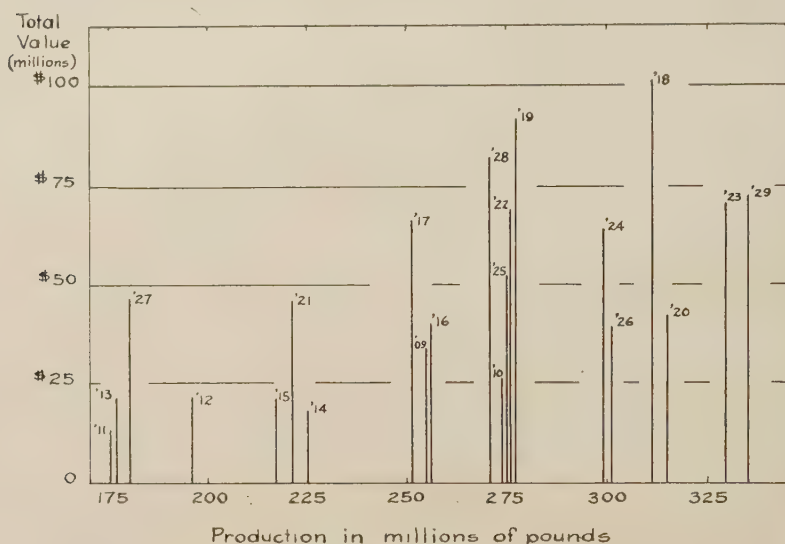


Figure 6. Production of burley tobacco in millions of pounds and total value in millions of dollars. Large values appear to be associated with large crops.

tobacco, however, this relationship between the size of crop and value is not so definite. When the size of burley crops is compared with their value, as in Figure 6, it is apparent that the larger values seem to be associated with the larger crops. It has been pointed out, however, that crops have become larger and prices have tended to rise since 1909, so the more recent crops are not only larger but generally have sold at more favorable prices. All crops from 1909 to 1916, therefore, have comparatively small value and all these crops except 1909, 1910 and 1916 are small in size also. On the other hand only two crops since 1917 have been less than 250 million pounds in size. It seems, therefore, because of this situation, that a different basis of comparison should be made, perhaps by using normal values

and normal crops as was done in discussing growers' response to price.

The effect of the relative size of a crop upon its relative value is indicated in Figure 7. The general trend in the size

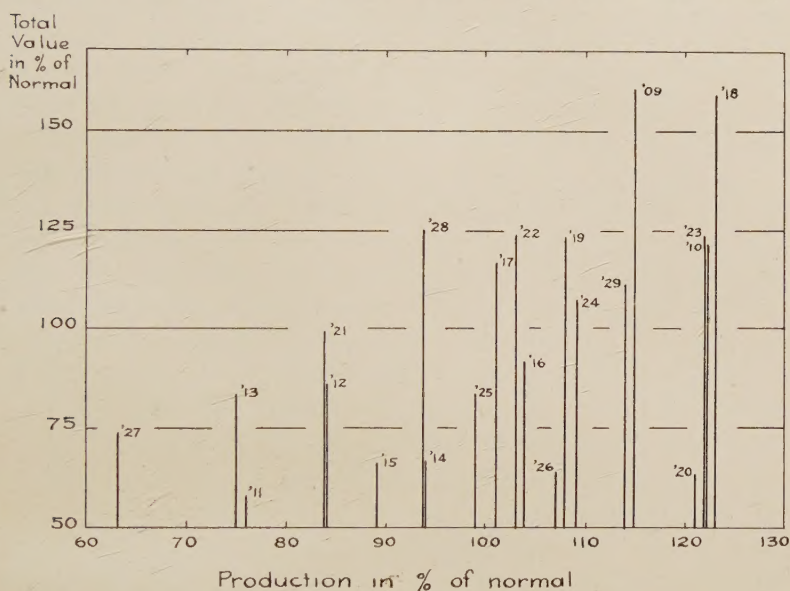


Figure 7. Production of burley tobacco in percent of normal and total value (adjusted for price level) in percent of normal. Relatively large total values tend to be associated with relatively large crops.

of crops has been computed and accepted as normal. Each crop is expressed as a percentage of what has been considered normal for that year and is measured on the horizontal scale at the bottom of the figure. In a similar manner, normal value, based on the adjusted prices mentioned above, has been computed and the value of each crop is measured in percentage of normal, on the vertical scale at the left. This method seems to indicate whether or not a crop was considered to be large or small or to be of high or of low value, at the time when it was produced.

Altho the relationship between size and value, even measured in this way, is not constant, there appears to be a definite tendency for the larger values to be associated with the

larger crops. A practical upper limit of value appears at about 25 percent above normal, however, as in only two years out of the twenty-one, did values exceed that amount. The 1909 crop sold at good prices because it followed the year of the "cut-out" when practically no burley tobacco was grown, and the 1918 crop was one of good quality. The 1928 crop was of excellent quality and the 1926 and 1920 crops were of poor quality, which doubtless helps to explain the apparent discrepancies in the values of those crops.

Probably, the value of the entire crop is not the ultimate measure of profit to individual growers. Perhaps value per acre would serve this purpose better, but no analysis of the relationship between the size of the crop and values per acre has been undertaken. Varying costs of production and yields per acre would need to be considered by individual producers in interpreting the results of such an analysis. It is doubtful, however, if the size of the crop, aside from its influence on price, is of much importance to individual growers.

Total crop values are of significance, however, in measuring the total purchasing power of all burley tobacco growers. Total values give some indication of the relative well-being of tobacco-producing communities and are important from the standpoint of state or national income. It is probable here, as in many other instances that those things which are of best interest to the community may not be of best interest to the individual producers. Programs for the purpose of bringing about better adjustment between production and consumption must take these facts into consideration. Generally, plans which work for the common good of the greatest number are the most desirable.

CONCLUSIONS

The acreage devoted to burley tobacco, its total production, the price per pound at which it has sold and its consumption, all have increased definitely during the last eighteen years. The average yield per acre, on the other hand, has decreased. Wide fluctuations in production have occurred and these usually

have been accompanied by opposite changes in price. The gross value of the total production in a given year, however, tends to be large when the crop is large and small when the crop is small.

Consumption of burley tobacco has increased at an annual rate of about 8 million pounds, since 1923. This is a lower rate than the increase in cigarette production for which a part of burley tobacco is used. The continuance of this upward trend in burley consumption will depend upon future developments in the production and consumption of cigarettes and of smoking and chewing tobaccos.

The volume of production is more closely associated with the acreage planted than with the yield obtained per acre, about three-fourths of the changes in production being due to changes in acreage and one-fourth to changes in yield. The acreage planted, in turn, is largely determined by the price at which tobacco sold during the two preceding years. These facts indicate that future production of burley tobacco is exceptionally subject to the control of price-making forces or to the concerted action of tobacco growers. Altho it is to be expected that future tendencies in the factors affecting burley tobacco prices will differ somewhat from those of the past, the recent or current trends discussed in this bulletin furnish important measures by which the significance of future changes may be judged.

